R E M A R K S

Claims 5 to 7 were amended to avoid the 35 USC 112, second paragraph rejection, which is discussed hereinbelow.

Claim 8 was amended to include the features of claim 9.

Enclosed is a MARKED-UP VERSION OF THE AMENDMENTS TO THE CLAIMS.

New claims 12 to 14 are supported in the specification on page 9, lines 18 to 20.

New claims 15 and 16 are supported in the specification on page 11, lines 19 to 21.

New claim 17 is supported in the specification on page 10, lines 16 to 18.

New claim 18 is supported in the specification on page 4, line 23 and page 7, lines 22 to 24.

New claim 19 recites a feature of original claim 9.

New claim 20 is supported in the specification on page 12, lines 12 to 17.

The ABSTRACT was amended hereinabove. Enclosed is a MARKED-UP VERSION OF THE AMENDMENTS TO THE ABSTRACT.

Claims 5 to 7 were rejected under 35 USC 112, second paragraph for allegedly being indefinite for the reason set forth in the last paragraph on page 2 of the Office Action.

Claims 5 to 7 were amended by following the Examiner's suggestion.

Withdrawal of the 35 USC 112, second paragraph rejection is therefore respectfully requested.

Claim 8 was rejected under 35 USC 102 as being anticipated by JP 4-63131.

Claim 8 was rejected under 35 USC 102 as being anticipated by JP 11-221440.

In view of the inclusion of the features of claim 9 into claim 8, it is considered that the above anticipation rejections are now moot. Withdrawal of the anticipation rejections is therefore respectfully requested.

Claims 8 and 9 were rejected under 35 USC 102 as being anticipated by Krause USP 5,645,808 for the reasons set forth in the last paragraph on page 3 of the Office Action.

Claims 1 to 9 were rejected under 35 USC 103 as being obvious over Krause in view of Tajima et al. USP 5,238,656 for the reasons set forth beginning at the middle of page 4 and continuing to the middle of page 5 of the Office Action.

It was admitted in the Office Action that Krause does not disclose placing a catalyst on a conductive metal to decompose halogenated organic compounds.

At the bottom of page 3 of the Office Action, the following was asserted:

> "Krause '808 discloses using an electrically conductive induction heating to decompose gaseous halogenated organic compounds."

In contrast to Krause, the present invention serves to overcome the following disadvantages in the prior art:

(1) The temperature range, which had been used for an electromagnetic induction-heating furnace was normally within a high range of <u>600°C or more</u>. The reason for such high

temperature range was that in an electromagnetic induction-heating furnace, the increasing rate of the in-furnace temperature was rapid, especially when seeking a high temperature range.

The use of an electromagnetic induction-heating furnace involved the following difficulties:

(a) A special power source was needed, such as a high frequency power source, which resulted in a complex device.

(b) A non-conductive reaction tube was required, which was made of quartz, carbon ceramics, etc., in order to make sure that there was electromagnetic induction heating on the internal carrier. That is why the electromagnetic induction heating furnace was rarely used within a low temperature range, because it was less advantageous.

(2) The temperature range of a catalyst-dissolving reaction, when using a halogenated hydrocarbon gas is 300 to 500°C, even at the highest. So, it was thought that there was no necessity to utilize an electromagnetic induction heating system.

In contrast to the above, the present inventors discovered several advantages as the result of adopting electromagnetic induction heating to a catalyst-dissolving reaction, when decomposing a halogenated hydrocarbon gas. These advantages are described in the present specification on page 3, line 16 to page 4, line 16; page 4, lines 18 to 24; and page 5, lines 3 to 12. Such advantages of the present invention are summarized as follows:

(a) The electromagnetic induction heating makes it possible to heat an electrically conductive heat carrier uniformly. Such uniform heating suppresses the occurrence of a hot spot and, consequently, the life of the catalyst can be improved to a great extent (prevention of catalyst degradation) (see the present specification on page 11, lines 19 to 23; page 21, lines 6 to 23).

(b) In the case of using a catalyst, the temperature is, basically, low. Furthermore, only the catalyst reaction area reaches the desired temperature, and the entirety of the gas is not heated, so that there is a very small heating surface, which influences the gas. This makes it possible to cool the gas rapidly.

The above-discussed advantages of the present invention afford the desirable result of suppressing dioxin synthesis to a great extent, after decomposing a halogenated hydrocarbon gas (see Example 6 and Comparative Example 3 in the present specification at page 20, line 5 to page 22, line 23).

The present invention has clear and definite advantages because of the above-discussed desirable technical features. In contrast thereto, there is no disclosure in the prior art concerning such desirable technical features provided by the present invention.

Tajima et al. do not teach electromagnetic induction heating (see column 2, lines 44 to 64 of Tajima et al., which describe only an electric heating, a combustion burner and the use of high pressure steam). The advantages of using electromagnetic

induction heating is demonstrated in Tables 1a and 1b on page 17 and Tables 2a and 2b on page 23 of the present application.

Therefore, it is respectfully submitted that one of ordinary skill in the art would not consider to combine Krause and Tajima et al. However, assuming *arguendo* that Krause and Tajima et al. are combinable, if the magnetic induction heating of Krause is combined with the Tajima et al. metal catalyst, such combination would not teach any of the aforesaid advantageous results of the present invention. The combination of Krause and Tajima et al. would in fact teach away from the effectiveness of the present invention, rather than approaching the above-described advantages (a) and (b) of the present invention.

Additionally, the cited prior art does not teach several of the specific pertinent features of the present invention. For example, applicants' claim 1 has specific features of "on a carrier" and "through the carrier". These pertinent specific features provide advantageous results when compared to the cited prior art.

It is therefore respectfully submitted that applicants' claimed invention is not anticipated and is not rendered obvious over the references, either singly or combined in the manner relied upon in the Office Action, in view of the distinctions described hereinabove. It is furthermore submitted that there are no teachings in the references to combine them in the manner relied upon in the Office Action.

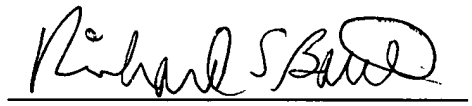
Reconsideration is requested. Allowance is solicited.

Submitted concomitantly herewith is a REQUEST FOR INITIALED COPY OF FORM PTO/SB/08A.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned at the telephone number given below for prompt action.

Respectfully submitted,

Frishauf, Holtz, Goodman
& Chick, P.C.
767 Third Ave., 25th Floor
New York, NY 10017-2023
Tel. No. (212) 319-4900
Fax No.: (212) 319-5101
RSB/ddf



Richard S. Barth
Reg. No. 28,180

Encs.: (1) PETITION FOR EXTENSION
(2) MARKED-UP VERSION OF THE AMENDMENTS TO THE CLAIMS
(3) MARKED-UP VERSION OF THE AMENDMENTS TO THE ABSTRACT
(4) REQUEST FOR INITIALED COPY OF FORM PTO/SB/08A

MARKED-UP VERSION OF THE AMENDMENTS TO THE CLAIMS (SERIAL NO. 10/007,111)

5. (Amended) The method of claim 1, wherein the catalyst comprises[:] (i) titania; (ii) at least one element selected from the group consisting of Pt, Pd, Au, Rh, and Ni; and (iii) at least one element selected from the group consisting of W, Cr, Fe, Mo, and V [; and titania (TiO_2)]. Support pg 5, 6

6. (Amended) The method of claim 1, wherein the catalyst comprises[:] (i) titania and (ii) at least one element selected from the group consisting of Pt, Pd, Au, Rh, and Ni [; and titania (TiO_2)].

7. (Amended) The method of claim 1, wherein the catalyst comprises[:b] (i) titania and (ii) at least one element selected from the group consisting of W, Cr, Fe, Mo, and V [; and titania (TiO_2)].

8. (Amended) A method for decomposing a halogenated hydrocarbon gas comprising [the step of]:

passing a halogenated hydrocarbon containing gas through a heating body which is electrically conductive and resistant to a halogen-containing gas to decompose the halogenated hydrocarbon

gas, while heating the heating body by [an] electromagnetic induction heating, wherein the heating body is a structure made of at least one material selected from the group consisting of SiC and stainless steel.

MARKED-UP VERSION OF THE AMENDMENTS TO THE ABSTRACT (SERIAL NO. 10/007,111)

--ABSTRACT OF THE DISCLOSURE

[The object is to provide a] A method and an apparatus for decomposing halogenated hydrocarbon gas economically and [stable] stably without relying on any special treatment and without generating dioxins. A catalyst to decompose halogenated hydrocarbon gas, 4, is supported on a carrier 3. A target gas, which contains the halogenated hydrocarbon gas, is passed through the carrier 3, while heating the carrier 3 using an electromagnetic induction heating mechanism 5,6.--